

# Recovery Plan Action Status

Plan Name: Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon

Plan Status: Final

Plan Date: 15-Dec-05

Lead Agency: USFWS

Lead Office: Sacramento Fish And Wildlife Office

(916)

414-6600 )

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Vernal pool tadpole shrimp (Lepidurus packardii), Longhorn fairy shrimp (Branchinecta longiantenna), Conservancy fairy shrimp (Branchinecta conservatio), Vernal pool fairy shrimp (Branchinecta lynchi)	1	4.1.3.3.1	Implement research on dispersal mechanisms of listed fairy shrimp and vernal pool tadpole shrimp.	Not Started			Contractor	Research: Migration	Graduate Student	
Vernal pool tadpole shrimp (Lepidurus packardii), Vernal pool fairy shrimp (Branchinecta lynchi)	3	2.4.3.2	Implement introduction of cysts to restored or created habitat	Ongoing Current			To be decided	Management: Reintroduction	Internal Field Assistance	Estimates earthwork, soil collection and application, staff time at ~\$25,000 [need to verify] per acre. Several conservation banks have created vernal pools and cysts collected from existing vernal pools were collected and used to inoculate the created pools. Monitoring is in progress. Van Vleck is an example. 10a1A permit required to conduct cyst translocation.
Vernal pool tadpole shrimp (Lepidurus packardii), Vernal pool fairy shrimp (Branchinecta lynchi)	3	2.4.3.3	Apply success criteria in a monitoring program to determine success of shrimp cyst introduction effort.	Ongoing Current			Conservation Organizations, U.S. Fish and Wildlife Service	Management: Habitat Maintenance and Manipulation	Internal Field Assistance	Post-creation/restoration monitoring is now in progress at several created pools in Sacramento Valley. Van Vleck property is an example.

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Delta green ground beetle ( <i>Elaphrus viridis</i> ), Vernal pool tadpole shrimp ( <i>Lepidurus packardii</i> ), Hoover's spurge ( <i>Chamaesyce hooveri</i> ), Colusa grass ( <i>Neostapfia colusana</i> ), Hairy Orcutt grass ( <i>Orcuttia pilosa</i> ), Longhorn fairy shrimp ( <i>Branchinecta longiantenna</i> ), Fleshy owl's-clover ( <i>Castilleja campestris</i> ssp. <i>succulenta</i> ), Slender Orcutt grass ( <i>Orcuttia tenuis</i> ), Sacramento Orcutt grass ( <i>Orcuttia viscida</i> ), Conservancy fairy shrimp ( <i>Branchinecta conservatio</i> ), Contra Costa goldfields ( <i>Lasthenia conjugens</i> ), Loch Lomond coyote thistle ( <i>Eryngium constancei</i> ), Butte County meadowfoam ( <i>Limnanthes floccosa</i> ssp. <i>californica</i> ), Lake County stonecrop ( <i>Parvisedum leiocarpum</i> ), Solano grass ( <i>Tuctoria mucronata</i> ), Few-flowered navarretia ( <i>Navarretia leucocephala</i> ssp. <i>pauciflora</i> (=N. <i>pauciflora</i> )), San Joaquin Orcutt grass ( <i>Orcuttia inaequalis</i> ), Vernal pool fairy shrimp ( <i>Branchinecta lynchi</i> ), Many-flowered navarretia	1	3.2.2	Conduct standardized status surveys within each vernal pool region, starting with core areas.	Partially Complete	FY 2008	FY 2012	To be decided	Other	Contract, Species Expert	See 1.3.1-1.3.16 above. Species expert has been funded through CVPHRP to conduct plant surveys in Sacramento and San Joaquin Valleys. Final report will be submitted to FWS in 2012.

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Vernal pool tadpole shrimp (Lepidurus packardii)	2	4.1.1.3	Conduct genetic research on remaining vernal pool species, as necessary.	Ongoing Current	FY 2010	FY 2012	Contractor	Research: Genetics	Contract	Genetic study of vernal pool tadpole shrimp throughout their range will start in August 2010. This study is being conducted by Brent Helm, private consultant and by Andy Aguilar from UC Merced.

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